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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,795	11/07/2005	John Charles Sinclair	3642.1001-000	9371
21005 7590 07/30/2007 HAMILTON, BROOK, SMITH & REYNOLDS, P.C. 530 VIRGINIA ROAD P.O. BOX 9133 CONCORD, MA 01742-9133			EXAMINER LEE, JAE W	
			ART UNIT 1656	PAPER NUMBER
			MAIL DATE 07/30/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/530,795

**Applicant(s)**

SINCLAIR ET AL.

**Examiner**

Jae W. Lee, Ph.D.

**Art Unit**

1656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-33 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Application status***

In the amendment filed on 04/08/2005, Applicants have canceled claim 34.

Claims 1-33 are pending in the instant application.

### ***Election/Restrictions***

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-25, drawn to a protein lattice having a regular structure with a repeating unit repeating in three dimensions, the repeating unit comprising protein protomers which each comprise at least two monomers fused together, the monomers each being monomers of a respective oligomer assembly into which the monomers are assembled for assembly of the protomers into the lattice, wherein the repeating unit comprises protomers comprising at least a first monomer which is a monomer of a first oligomer assembly which is symmetrical in three dimensions.

Group II, claim(s) 26, drawn to a method of performing x-ray crystallography comprising supporting an array of macromolecular entities on a protein lattice according to claim 1 and performing x-ray crystallography on the lattice having the macromolecular entities supported thereon.

Group III, claim(s) 27-29, drawn to a protein protomer comprising at least two monomers fused together, the monomers each being monomers of a respective oligomer assembly into which the monomers are capable of self-assembly to assemble at least part of a repeating unit of the protein lattice having a regular structure repeating in three dimensions, wherein, in said protomer, at least a first monomer is a monomer of a first oligomer assembly which is symmetrical in three dimensions.

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Group IV, claim(s) 30-33, drawn to a polynucleotide encoding a protein protomer according to claim 28, a vector capable of expressing a protomer according to claim 28, a host cell comprising a vector according to claim 31, and a method of making a protein protomer according to claim 28, comprising expressing a polynucleotide sequence which encodes the protomer in a host cell and, optionally, purifying the expressed protomer.

The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Where a group of inventions is claimed in an application, the requirement of unity of invention shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art. Narayana et al. (The Dimerization Domain of HNF-1 $\alpha$ : Structure and Plasticity of an Intertwined Four-helix Bundle with Application to Diabetes Mellitus, J. Mol. Biol. (2001) 310, 635-658) teach a method of performing x-ray crystallography comprising at two monomers of HNF-1  $\alpha$ , which corresponds to both the limitations of claim 1, in the recitation of "[a] protein lattice having a regular structure with a repeating unit repeating in three dimensions, the repeating unit comprising protein protomers which each comprise at least two monomers fused together, the monomers each being monomers of a respective oligomer assembly into which the monomers are assembled for assembly of the protomers into the lattice, wherein the repeating unit comprises protomers comprising at least a first monomer which is a monomer of a first

oligomer assembly which is symmetrical in three dimensions,” and claim 26, in the recitation of “a method of performing x-ray crystallography comprising supporting an array of macromolecular entities on a protein lattice according to claim 1 and performing x-ray crystallography on the lattice having the macromolecular entities supported thereon,” and thus, the shared technical feature of the groups is not a “special technical feature”, unity of invention between the groups does not exist.

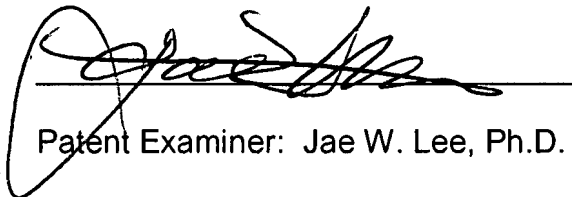
Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(l).

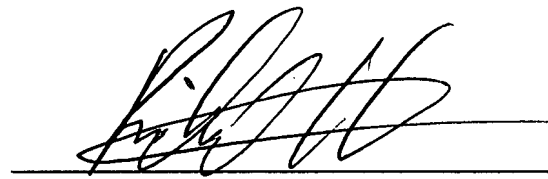
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jae W. Lee whose telephone number is 571-272-9949. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathleen Kerr Bragdon can be reached on 571-272-0931. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Patent Examiner: Jae W. Lee, Ph.D.



**RICHARD HUTSON, PH.D.**  
**PRIMARY EXAMINER**